



## **DEPARTMENT OF COMMERCE**

### **National Oceanic and Atmospheric Administration**

**[RTID 0648-XB867]**

#### **Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the Replacement of Pier 3 at Naval Station Norfolk in Norfolk, Virginia**

**AGENCY:** National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

**ACTION:** Notice; Issuance of an Incidental Harassment Authorization.

**SUMMARY:** In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS has issued an IHA to the United States Department of the Navy (Navy) to incidentally harass marine mammals during pile driving activities associated with the replacement of Pier 3 at Naval Station Norfolk, in Norfolk, Virginia.

**DATES:** This Authorization is effective from April 1, 2022 through March 31, 2023.

**FOR FURTHER INFORMATION CONTACT:** Kim Corcoran, Office of Protected Resources, NMFS, (301) 427-8401. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: <https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act>. In case of problems accessing these documents, please call the contact listed above.

#### **SUPPLEMENTARY INFORMATION:**

##### **Background**

The MMPA prohibits the “take” of marine mammals, with certain exceptions. sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary



of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed incidental take authorization may be provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other “means of effecting the least practicable adverse impact” on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to in shorthand as “mitigation”); and requirements pertaining to the mitigation, monitoring and reporting of the takings are set forth.

The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

### **Summary of Request**

On July 15, 2021 NMFS received a request from the Navy for an IHA to take marine mammals incidental to the reconstruction of Pier 3 at Naval Station Norfolk in Norfolk, Virginia. The application was deemed adequate and complete on October 27, 2021. Subsequently, the Navy provided a revised and updated version of the application, which was determined to be adequate and complete on January 10, 2022. The Navy’s request is for take of a small number of five species by Level B harassment and Level A harassment. Neither the Navy nor NMFS expects serious injury or mortality to result



from this activity and, therefore, an IHA is appropriate. NMFS previously issued IHAs to the Navy for similar work (86 FR 48986; September 1, 2021; 85 FR 33139; June 01, 2020; 83 FR 30406; June 28, 2018). This IHA will cover one year of a larger project for which the Navy plans to submit a request for a Letter of Authorization (LOA) for additional work occurring from April 1, 2023 through December 30, 2026. The larger 4-year project involves the demolition and reconstruction of a submarine pier at Naval Station Norfolk.

## **Description of Activity**

### *Overview*

The purpose of this project is to replace Pier 3 at Naval Station (NAVSTA) Norfolk in Norfolk, VA. The existing Pier 3 will be completely demolished and a new Pier 3 will be constructed immediately north of the existing location (See Figure 1). Work at Pier 4, Pier 3T and the bulkheads associated with Pier 3 and 3T (CEP-175, CEP-176, and CEP-102) will also occur (See Figure 1). The project includes impact and vibratory pile driving and vibratory pile removal and drilling. Drilling is considered a continuous noise source, similar to vibratory pile driving. Sounds resulting from pile driving and removal may result in the incidental take of marine mammals by Level A and Level B harassment in the form of auditory injury or behavioral harassment. The in-water construction period for the action will occur over 12 months.

### *Dates and Duration*

The IHA is effective from April 1, 2022 to March 31, 2023. Approximately 280 days will be required for the project. The Navy plans to conduct all work during daylight hours.

### *Specific Geographic Region*



Pier 3 at NAVSTA Norfolk is located at the confluence of the Elizabeth River, James River, Nansemond River, LaFayette, Willoughby Bay, and Chesapeake Bay (Figure 2).

Human generated sound is a significant contributor to the ambient acoustic environment surrounding NAVSTA Norfolk, as it is located in close proximity to shipping channels as well as several Port of Virginia facilities with frequent, noise-producing vessel traffic that, altogether, have an annual average of 1,788 vessel calls (Port of Virginia, 2021). Other sources of human-generated underwater sound not specific to naval installations include sounds from echo sounders on commercial and recreational vessels, industrial ship noise, and noise from recreational boat engines. Additionally, on average, maintenance dredging of the navigation channel occurs every 2 years (USACE and Port of Virginia, 2018).



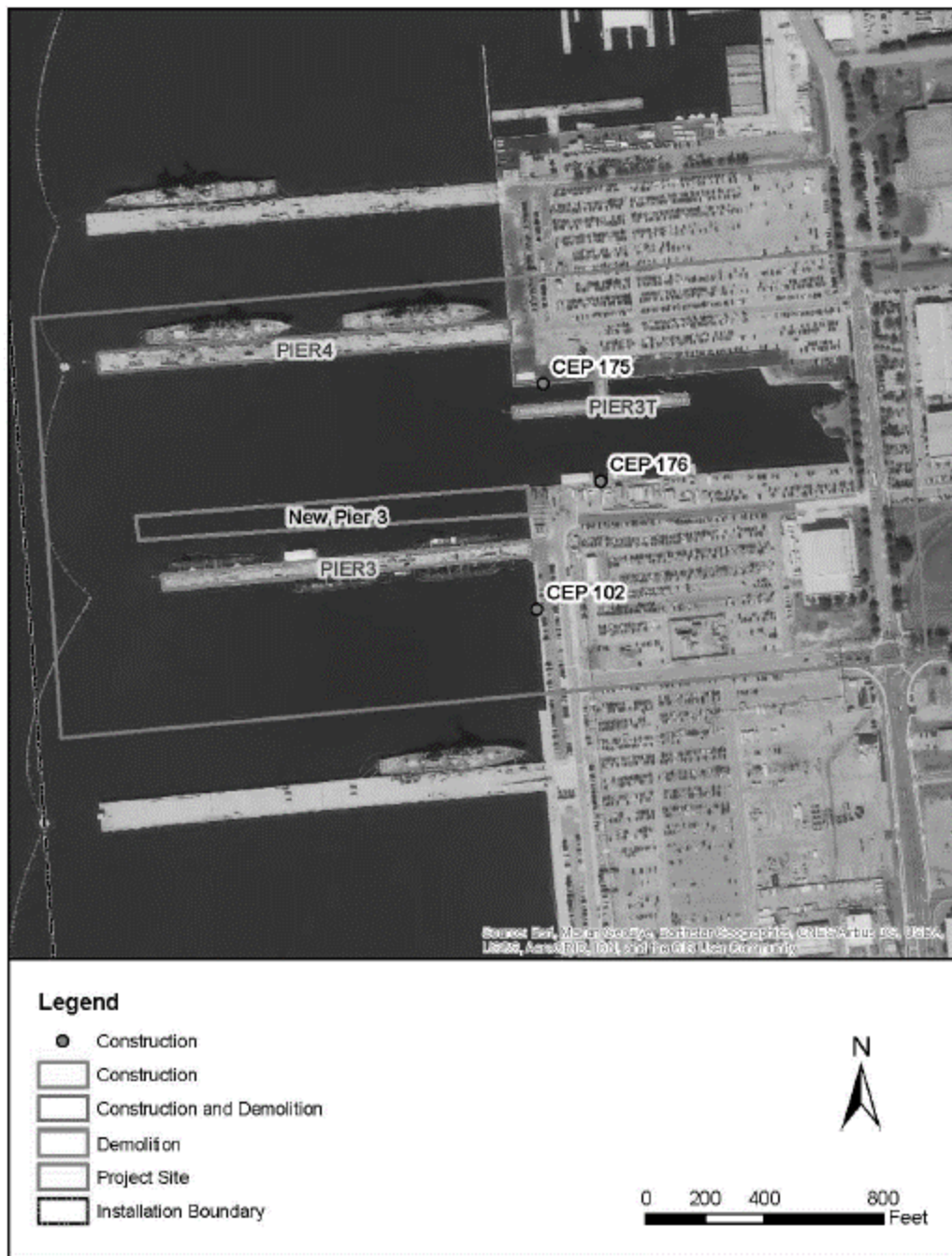


Figure 1. Project Site Map, location of existing and planned Pier 3.



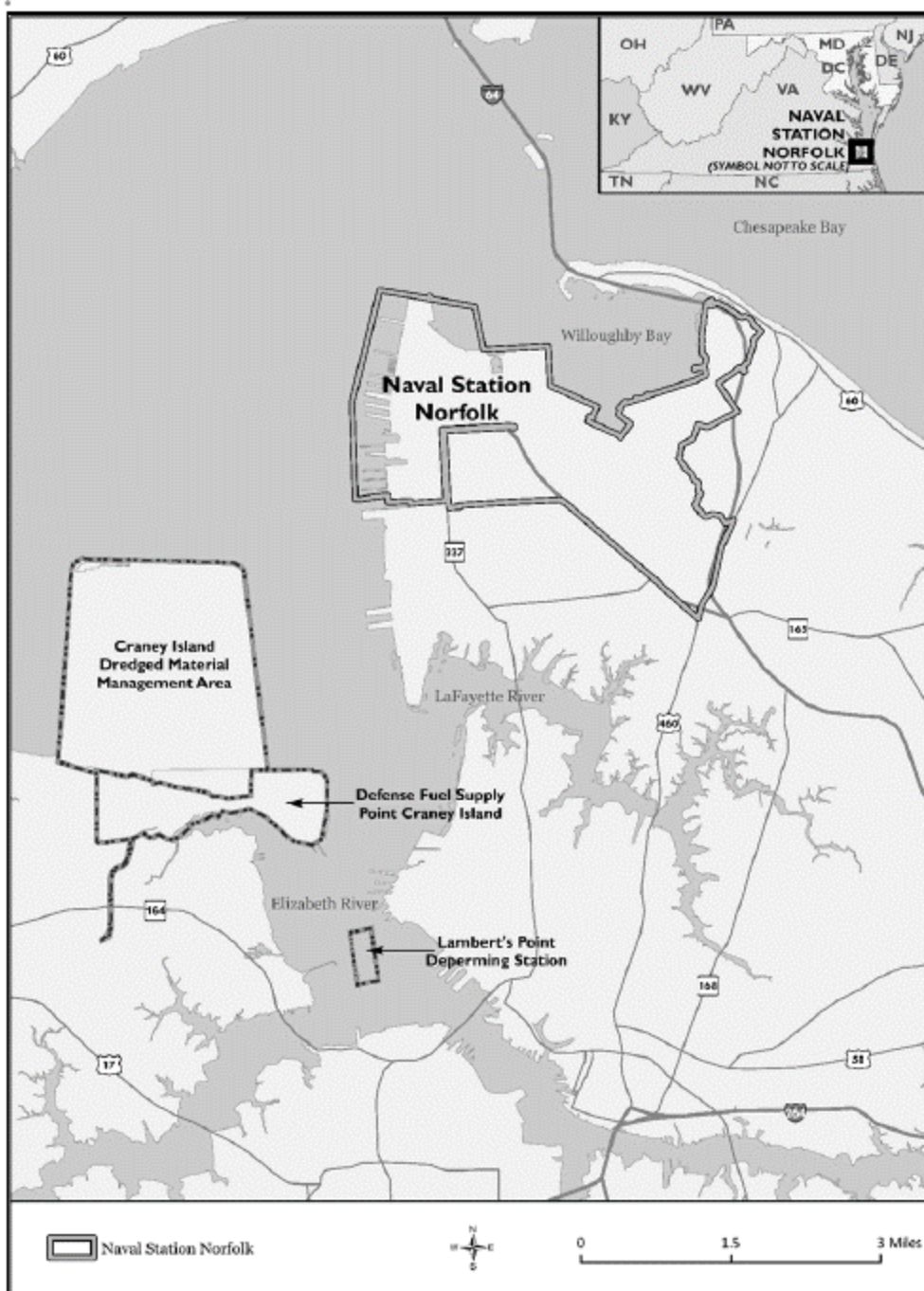


Figure 2. Project location Map, Naval Station Norfolk.



### *Detailed Description of Specific Activity*

The project involves the replacement of Pier 3 at the NAVSTA waterfront. The existing Pier 3 will be completely demolished and a new Pier 3 will be constructed immediately north of the existing location. Additional work associated with the replacement of Pier 3 includes the outfitting of Pier 4 for temporary submarine berthing, demolition of Pier 3T, construction at the CEP-176 and the CEP-175 bulkheads, and beginning of construction of the CEP-102 bulkhead and relieving platform. The project includes six phases that will be completed under this IHA and the future requested LOA. A preliminary work schedule and activity details for the work under this IHA are provided in Table 1. Piles are anticipated to be removed with a vibratory hammer, however direct pull or clamshell removal may be used depending on site conditions. Since vibratory removal is the loudest activity, to be precautionary, we assume all piles will be removed with a vibratory hammer. Pile installation/removal will occur using land-based or barge-mounted cranes and vary in method based on pile type.

Table 1 outlines a preliminary work schedule for the demolition and reconstruction of Pier 3 at NAVSTA. Some project elements will use only one method of pile installation (*e.g.*, vibratory OR drilling/impact OR impact only), but all methods have been analyzed. The method of installation will be determined by the construction crew once demolition and installation has begun. Therefore, the total take estimate reflects the worst case scenario for the project.

A detailed description of the planned project is provided in the **Federal Register** notice for the proposed IHA (87 FR 3976; January 26, 2022). Since that time, no additional changes have been made to the planned activities. Therefore, a detailed description is not provided here. Please refer to that **Federal Register** notice for the description of the specific activity.

**Table 1. Preliminary Estimated In-Water Construction Schedule for Year 1.**



Location	Activity	Amount and Schedule	Type and Size	Method <sup>1</sup>	Daily Production Rate (Piles/day)	Strikes/Duration per pile	Total Production days
Pier 4	Demolition of Existing Fender Piles	36 fender piles June 2022-September 2022	14-inch timber	Vibratory Hammer	4	60 minutes	9 days
	Installation of Fender Piles	36 fender piles June 2022-September 2022	24-inch precast concrete square	Drilling with Impact Hammer OR	6	6 hours	6 days
				Impact Hammer	12	450 strikes	3 days
Pier 3T	Demolition of Existing Pier 3T	286 bearing piles August 2022-November 2022	18-inch precast concrete square	Vibratory Hammer	4	60 minutes	72 days
		87 fender piles August 2022-November 2022	14-inch timber	Vibratory Hammer	4	60 minutes	22 days
CEP-175	Repair Fender System	9 fender piles October 2022-November 2022	13-inch polymeric	Drilling with Impact Hammer OR	7	60 minutes	2 days
				Impact Hammer OR	7	450 strikes	2 days
				Vibratory Hammer	7	30 minutes	2 days
CEP-102	Demolish Partial Existing Fender System	22 fender piles October 2022-November 2022	18-inch concrete square	Vibratory Hammer	4	60 minutes	6 days
		9 fender piles October 2022-November 2022	14-inch timber	Vibratory Hammer	4	60 minutes	3 days
		4 fender piles	13-inch polymeric	Vibratory Hammer	4	60 minutes	1 day
Pier 3	Begin Construction of New Pier 3	300 bearing piles October 2022-March 2023	24-inch precast concrete square	Impact Hammer	2	3200 strikes	150 days
CEP-176	Begin Construction of New Bulkhead	109 bearing piles December 2022-30 March 2023	42-inch steel pipe	Impact Hammer OR	2	1800 strikes	55 days



				Vibratory Hammer	2	240 minutes	55 days
		221 sheet piles December 2022-30 March 2023	28-inch steel sheet	Impact Hammer OR	4	270 strikes	56 days
				Vibratory Hammer	4	60 minutes	56 days
CEP-102	Construction of a Portion of the New Bulkhead	4 bearing piles December 2022-30 March 2023	42-inch steep pipe	Impact Hammer OR	2	2000 strikes	2 days
				Vibratory Hammer	2	240 minutes	2 days
		8 bulkhead sheet piles December 2022-30 March 2023	28-inch steel sheet	Impact Hammer OR	4	270 strikes	2 days
				Vibratory Hammer	4	60 minutes	2 days
		11 bearing piles December 2022-30 March 2023	24-inch precast concrete square	Pre-drilling with Impact Hammer OR	2	6 hours	6 days
				Impact Hammer	2	2700 strikes	6 days
Total piles installed, extracted, or drilled		1,142					
Total days pile driving/extraction/drilling						280 days <sup>2,3,4</sup>	

1. Only one method of installation is likely; however, because the exact means of installation are up to the selected construction contractor, all possibilities have been analyzed.
2. Total number of days takes into account the most days possible for each pile type with multiple potential installation methods (*i.e.*, the worst case scenario).
3. The preliminary schedule has work at Pier 4, demolition of Pier 3T, start of construction at Pier 3, and work at CEP-175 potentially occurring in the same timeframe, thus multiple pile types could be driven in the same day and the total days of pile driving/extraction/drilling reflects this assumption. Thus, the maximum number of days of work from these activities is associated with beginning the construction of Pier 3 (150 days). Adding remaining work, minus those activities that will occur during the same time frame (Pier 4, demo Pier 3T, and CEP-175), equals 280 days.
4. Multiple types of equipment may be used on the same day; however, use of multiple noise sources (hammers or drills) will not occur at the same time. There will be no simultaneous activities associated with this project.

Mitigation, monitoring, and reporting measures are described in detail later in this document (please see **Mitigation and Monitoring and Reporting**).

### Comments and Responses

A notice of NMFS's proposal to issue an IHA to the Navy was published in the **Federal Register** on January 26, 2022 (87 FR 3976). That notice described, in detail, the



Navy's activity, the marine mammal species that may be affected by the activity, and the anticipated effects on marine mammals. During the 30-day public comment period, NMFS received no public comments. There have been no changes from the proposed to the final IHA.

### **Description of Marine Mammals in the Area of Specified Activities**

Sections 3 and 4 of the Navy's application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of the potentially affected species. Additional information regarding population trends and threats may be found in NMFS's Stock Assessment Reports (SARs; <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>) and more general information about these species (*e.g.*, physical and behavioral descriptions) may be found on NMFS's website (<https://www.fisheries.noaa.gov/find-species>).

Table 2 lists all species or stocks for which take is expected and authorized for this action, and summarizes information related to the population or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. For taxonomy, we follow Committee on Taxonomy (2021). PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS's SARs). While no mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS's stock abundance estimates for most



species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS's U.S. Atlantic and Gulf of Mexico SARs (*e.g.*, Hayes *et al.*, 2021). All values presented in Table 2 are the most recent available at the time of publication and are available in the 2021 draft SARs (Hayes *et al.*, 2021).

**Table 2. Marine Mammal Species Likely to Occur Near the Project Area.**

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N) <sup>1</sup>	Stock abundance (CV, N <sub>min</sub> , most recent abundance survey) <sup>2</sup>	PBR	Annual M/SI <sup>3</sup>
Order Cetartiodactyla – Cetacea – Superfamily Mysticeti (baleen whales)						
Family Eschrichtiidae						
Humpback whale	<i>Megaptera novaeangliae</i>	Gulf of Maine	-, -; Y	1,396 (0; 1,380; 2016)	22	12.15
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae						
Bottlenose dolphin	<i>Tursiops truncatus</i>	Western North Atlantic (WNA) Coastal, Northern Migratory	-, -; Y	6,636(0.41; 4,759; 2016)	48	12.2-21.5
Bottlenose dolphin	<i>Tursiops truncatus</i>	WNA Coastal, Southern Migratory	-, -; Y	3,751 (0.06; 2,353; 2016)	24	0-18.3
Bottlenose dolphin	<i>Tursiops truncatus</i>	Northern North Carolina Estuarine	-, -; Y	823 (0.06; 782; 2017)	7.8	7.2-30
Family Phocoenidae (porpoises)						
Harbor porpoise	<i>Phocoena phocoena</i>	Gulf of Maine/Bay of Fundy	-, -; N	95,543 (0.31; 74,034; 2016)	851	217
Order Carnivora – Superfamily Pinnipedia						
Family Phocidae (earless seals)						
Harbor seal	<i>Phoca vitulina</i>	WNA	-, N	61,336 (0.08; 57,637; 2018)	1729	339



Gray seal <sup>4</sup>	<i>Halichoerus grypus</i>	WNA	-; N	27,300 (0.22; 23,785; 2016)	1,389	4,453
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<sup>1</sup> - Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

<sup>2</sup> - NMFS marine mammal stock assessment reports online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments/>. CV is coefficient of variation; Nmin is the minimum estimate of stock abundance. In some cases, CV is not applicable [explain if this is the case]

<sup>3</sup> - These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury (M/SI) from all sources combined (e.g., commercial fisheries, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value or range. A CV associated with estimated mortality due to commercial fisheries is presented in some cases.

<sup>4</sup> - This stock abundance estimate for only the U.S. portion of this stock. The actual stock abundance, including the Canadian portion of the population, is estimated to be approximately 451,431 animals. The PBR value listed here is only for the U.S. portion of the stock, while M/SI reflects both the Canadian and U.S. portions.

As indicated above, all five species (with seven managed stocks) in Table 2

temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur, and we have authorized it. While North Atlantic right whales (*Eubalaena glacialis*), minke whales (*Balaenoptera acutorostrata acutorostrata*), and fin whales (*Balaenoptera physalus*) have been documented in the area, the temporal and/or spatial occurrence of these whales is far outside the project area for this project and take is not expected to occur. Therefore, they are not discussed further beyond the explanation provided in the **Federal Register** notice for the proposed IHA (87 FR 3976; January 26, 2022).

A detailed description of the species likely to be affected by the Navy's project, including brief introductions to the species and relevant stocks as well as available information regarding population trends and threats, and information regarding local occurrence, were provided in the **Federal Register** notice for the proposed IHA (87 FR 3976; January 26, 2022); since that time, we are not aware of any changes in the status of these species and stocks; therefore, detailed descriptions are not provided here. Please refer to that **Federal Register** notice for these descriptions. Please also refer to NMFS' website (<https://fisheries.noaa.gov/find-species>) for generalized species accounts.

## Potential Effects of Specified Activities on Marine Mammals and their Habitat



The effects of underwater noise from the Navy's construction activities have the potential to result in behavioral harassment of marine mammals in the vicinity of the survey area. The notice of proposed IHA (87 FR 3976; January 26, 2022) included a discussion of the effects of anthropogenic noise on marine mammals and the potential effects of underwater noise from the Navy's activity on marine mammals and their habitat. That information and analysis is incorporated by reference into this final IHA determination and is not repeated here; please refer to the notice of proposed IHA (87 FR 3976; January 26, 2022).

### **Estimated Take**

This section provides an estimate of the number of incidental takes for authorization through this IHA, which will inform both NMFS' consideration of "small numbers" and the negligible impact determination.

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as any act of pursuit, torment, or annoyance, which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes will primarily be by Level B harassment, as noise generated from in-water pile driving (vibratory and impact) and drilling has the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for auditory injury (Level A harassment) to result, primarily for high- and low-frequency species and phocids because predicted auditory injury zones are larger than for mid-frequency species. However, auditory injury is unlikely to occur for mid-frequency species due to the shutdown zones (see **Mitigation** section). Additionally, the mitigation



and monitoring measures are expected to minimize the severity of the taking to the extent practicable.

As described previously, no mortality is anticipated or authorized for this activity. Below we describe how the take is estimated.

Generally speaking, we estimate take by considering: (1) acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) the number of days of activities. We note that while these basic factors can contribute to a basic calculation to provide an initial prediction of takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.*, previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the take estimate.

#### *Acoustic Thresholds*

NMFS recommends the use of acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment).

*Level B Harassment for non-explosive sources* – Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g.*, frequency, predictability, duty cycle), the environment (*e.g.*, bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.*, 2007, Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a factor that is both



predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner we consider Level B harassment when exposed to underwater anthropogenic noise above received levels of 120 dB re 1 microPascal, root mean square ( $\mu\text{Pa}$  (rms)) for continuous (e.g., vibratory pile-driving, drilling) and above 160 dB re 1  $\mu\text{Pa}$  (rms) for non-explosive impulsive (e.g., impact pile driving) or intermittent (e.g., scientific sonar) sources.

The Navy's construction includes the use of continuous (vibratory pile driving, drilling) and impulsive (impact pile driving) sources, and therefore the 120 and 160 dB re 1  $\mu\text{Pa}$  (rms) are applicable.

*Level A harassment for non-explosive sources* - NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). As previously noted, the Navy's activity include the use of impulsive (impact pile driving) and non-impulsive (vibratory pile driving/removal, drilling) sources.

These thresholds are provided in the table below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS 2018 Technical Guidance, which may be accessed at <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance>.

**Table 3. Thresholds Identifying the Onset of Permanent Threshold Shift**

	PTS Onset Acoustic Thresholds* (Received Level)	
Hearing Group	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	<i>Cell 1</i> $L_{pk,flat}$ : 219 dB	<i>Cell 2</i> $L_{E,LF,24h}$ : 199 dB



	$L_{E,LF,24h}$ : 183 dB	
Mid-Frequency (MF) Cetaceans	<i>Cell 3</i> $L_{pk,flat}$ : 230 dB $L_{E,MF,24h}$ : 185 dB	<i>Cell 4</i> $L_{E,MF,24h}$ : 198 dB
High-Frequency (HF) Cetaceans	<i>Cell 5</i> $L_{pk,flat}$ : 202 dB $L_{E,HF,24h}$ : 155 dB	<i>Cell 6</i> $L_{E,HF,24h}$ : 173 dB
Phocid Pinnipeds (PW) (Underwater)	<i>Cell 7</i> $L_{pk,flat}$ : 218 dB $L_{E,PW,24h}$ : 185 dB	<i>Cell 8</i> $L_{E,PW,24h}$ : 201 dB
Otariid Pinnipeds (OW) (Underwater)	<i>Cell 9</i> $L_{pk,flat}$ : 232 dB $L_{E,OW,24h}$ : 203 dB	<i>Cell 10</i> $L_{E,OW,24h}$ : 219 dB
<p>* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.</p> <p><i>Note:</i> Peak sound pressure (<math>L_{pk}</math>) has a reference value of 1 <math>\mu</math>Pa, and cumulative sound exposure level (<math>L_E</math>) has a reference value of 1 <math>\mu</math>Pa<sup>2</sup>s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript “flat” is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (<i>i.e.</i>, varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.</p>		

### *Ensonified Area*

Here, we describe operational and environmental parameters of the activity that will feed into identifying the area ensonified above the acoustic thresholds, which include source levels and transmission loss coefficient.

In order to calculate the distances to the Level A harassment and the Level B harassment sound thresholds for the methods and piles being used in this project, NMFS used acoustic monitoring data from other locations to develop proxy source levels for the various pile types, sizes and methods (Table 4). Generally we choose source levels from similar pile types from locations (*e.g.*, geology, bathymetry) similar to the project. At this time, NMFS is not aware of reliable source levels available for polymeric piles using vibratory pile installation, therefore source levels for timber pile driving were used as a



proxy. Similarly, the following proxies were used as source levels for piles where no data was available: source levels for the 66-inch steel pile was used as a proxy for 42-inch steel pipe piles (vibratory); the 30-inch steel pile was used as a proxy for the 28-inch sheet piles (impact); and 18-inch octagonal pile was used as a proxy for 18-inch concrete piles (impact). Additionally, data on vibratory extraction of concrete piles are not available, therefore the Navy followed previous guidance suggesting that timber piles be used as a proxy for sound source levels (84 FR 28474; June 19, 2019).

Very little information is available regarding source levels for in-water drilling activities associated with nearshore pile installation. Measurements made during a pile drilling project in 1-5 m (3-16 ft) depths at Santa Rosa Island, CA, by Dazey *et al.*, (2012) appear to provide the best available proxy source levels for the Navy's activities. Dazey *et al.* (2012) reported average rms source levels ranging from 151 to 157 dB re 1  $\mu$ Pa, normalized to a distance of 1 m (3 ft) from the pile, during activities that included casing removal and installation as well as drilling, with an average of 154 dB re 1  $\mu$ Pa during 62 days that spanned all related drilling activities during a single season. The sound field in the project area is the existing background noise plus additional construction noise from the project. Marine mammals are expected to be affected via sound generated by the primary components of the project (*i.e.*, impact pile driving, vibratory pile driving, and drilling).

**Table 4 – Project Sound Source Levels normalized to 10 meters.**

Pile Type	Pile Size (inch)	Method	Peak SPL (re 1 $\mu$ Pa (rms))	RMS SPL (re 1 $\mu$ Pa (rms))	SEL (re 1 $\mu$ Pa (rms))	Source
Steel Pipe Pile	42	Impact	213	190	177	Navy 2015
		Vibratory	--	168	168	Sitka 2017
Steel Sheet	28	Impact	211	196	181	NAVFAC SW 2020
		Vibratory	--	167	167	Navy 2015



Concrete Pile	24	Impact	189	176	163	Illingworth and Rodkin 2017
		Vibratory	185	162	157	Caltrans 2020
Concrete Pile	18	Impact	185	166	154	Caltrans 2020
		Vibratory	185	162	157	Caltrans 2020
Polymeric Pile	13	Impact	177	153	--	Denes et al., 2016
		Vibratory	185	162	157	Caltrans 2020
Timber Pile	14	Vibratory	185	162	157	Caltrans 2020
NA	"Multiple pile sizes" <sup>1,2</sup>	Drilling	--	154 <sup>2</sup>	154	Dazey <i>et al.</i> , 2012

1. Pile sizes being installed using the drilling method might include 24-inch precast concrete square, 13-inch polymeric and 24-inch precast concrete square.
2. Source levels were normalized to a distance of 1 m (3 ft) from the pile during activities that included casing removal and installation as well as drilling, with an average of 154 dB re 1µPa during the course of the project.

When the NMFS Technical Guidance (2016) was published, in recognition of the fact that ensounded area/volume could be more technically challenging to predict because of the duration component in the new thresholds, we developed a User Spreadsheet that includes tools to help predict a simple isopleth that can be used in conjunction with marine mammal density or occurrence to help predict takes. We note that because of some of the assumptions included in the methods used for these tools, we anticipate that isopleths produced are typically going to be overestimates of some degree, which may result in some degree of overestimate of Level A harassment take. However, these tools offer the best way to predict appropriate isopleths when more sophisticated 3D modeling methods are not available, and NMFS continues to develop ways to quantitatively refine these tools, and will qualitatively address the output where appropriate. For stationary sources in-water pile driving/removal and drilling activities from the Navy's project, NMFS User Spreadsheet predicts the distance at which, if a marine mammal remained at that distance the whole duration of the activity, it would incur PTS. Inputs used in the User Spreadsheet are reported in Table 1 and sources levels used in the User Spreadsheet are



reported in Table 4, and the resulting isopleths are reported in Table 5 (Impact) and Table 6 (Vibratory and Drilling) below.

**Table 5 – Level A and Level B Harassment Isopleths for Impact Pile Driving**

Pile Driving Site	Source	Level A- Radius to Isopleth (m)				Level B- Radius to Isopleth (m)	
		LF Cetaceans	MF Cetaceans	HF Cetaceans	Phocids	Distance to Level B Threshold (m)	Area within Level B Threshold (km <sup>2</sup> ) <sup>1</sup>
Pier 4	24” Concrete Fender	143	5	170	76	117	<0.1
CEP-175	13” Polymeric	22	1	26	12	3	<0.1
Pier 3	24” Concrete Bearing	160	6	190	86	117	<0.1
CEP-176	42” Steel Pipe Bearing	934	33	1112	500	1000	0.4
	28” Steel Sheet	773	28	921	414	2512	2.4
CEP-102	42” Steel Pipe	1002	36	1193	536	1000	1.4
	28” Steel Sheet	773	28	921	414	2512	8.0
	24” Concrete Pile	143	5	170	76	117	<0.1
	18” Concrete Pile	36	1	43	19	25	<0.1

1. Area within the Level B threshold was calculated using geographic information system (GIS) data as determined by transmission loss modeling, accounting for land.

**Table 6 – Level A and Level B Harassment Isopleths for Vibratory Pile Driving and Removal, and Pre-Drilling.**

Pile Driving Site	Source	Level A- Radius to Isopleth (m)				Level B- Radius to Isopleth (m)	
		LF Cetaceans	MF Cetaceans	HF Cetaceans	Phocids	Level B- Radius to Isopleth (m)	Area within Level B Threshold (km <sup>2</sup> ) <sup>1</sup>



Pier 4	14" Timber (demolition)	20	2	30	12	6310	49.9
	24" Concrete (vibratory)	5	<1	4	<1	6310	97.8
	24" Concrete (drilling)	1	0	1	<1	1848	4.4
Pier 3T	16" and 18" Concrete (demolition)	20	2	30	12	6310	49.9
	14" Timber (demolition)	20	2	30	12	6310	49.9
CEP-175	13" Polymeric (vibratory)	18	2	27	11	6310	11.1
	13" Polymeric (drilling)	1	<1	1	<1	1848	4.4
CEP-176	42" Steel Pipe	80	7	118	49	15849 <sup>2</sup>	46.0
	28" Steel Sheet	43	4	64	26	13594	39.9
CEP-102	42" Steel Pipe	80	7	118	49	15849	98.9
	28" Steel Sheet	43	4	64	26	13594	90.6
	24" Concrete (drilling)	1	0	1	<1	1848	4.4
	14" Timber	20	2	30	12	6310	49.9
	13" Polymeric	20	2	30	12	6310	49.9
	18" Concrete	20	2	29.7	12	6310	49.9

1. Area within the Level B threshold was calculated using geographic information system (GIS) data as determined by transmission loss modeling.
2. Note: This value is different than that listed in the application, due to a typographic error in the application. The correct maximum distance to 120 dB RMS threshold is 15,849 m as seen here.

The maximum distance to the Level A harassment threshold during construction would be during the impact driving of 42-inch steel pipe piles at CEP-102 (1193 m for harbor porpoise; 1001 m for humpback whale; 35.6 m for bottlenose dolphin; and 536 m for pinnipeds). The largest calculated Level B harassment zone extends out to 15,849 m, which would result from the vibratory installation of the 42-inch steel pipe pile.



## *Marine Mammal Occurrence and Take Calculation and Estimation*

In this section we provide the information about the presence, density, or group dynamics of marine mammals that was used to inform the take calculations. We describe how the information provided above is brought together to produce a quantitative take estimate for each species.

### **Humpback Whale**

Humpback whales occur in the mouth of the Chesapeake Bay and nearshore waters of Virginia during winter and spring months. Most detections during shipboard surveys were one or two juveniles per sightings. Although two individuals were detected in the vicinity of the project activities, there is no evidence that they linger for multiple days. Because no density estimates are available for the species in this area, the Navy estimated two takes for every 60 days of pile driving and drilling activities. Based on this information, NMFS has similarly estimated that two humpback whales may be taken by Level B harassment for every 60 days of pile driving and pre-drilling activities, which equates to 9 takes over 280 project days (Table 1). To be conservative, the Navy has requested 3 additional Level B harassment takes of humpback whales. Therefore, the Navy is requesting, and NMFS is authorizing 12 takes by Level B harassment of humpback whale (Table 9).

The largest Level A harassment zone for low-frequency cetaceans extends approximately 1002 m from the source during impact driving of a 48 inch steel pipe pile (Table 6). The Navy will implement a 1,010 m shutdown zone for humpback whales during impact pile driving of the 48 inch steel pipe piles, and shutdown zones that include the entire Level A harassment isopleth for all activities, as indicated in Table 10. Therefore, the Navy did not request, and NMFS does not authorize Level A harassment take of humpback whale.

### **Bottlenose Dolphin**



The expected number of bottlenose dolphins in the project area was estimated using inshore seasonal densities provided in Engelhaupt *et al.* (2016) from vessel line-transect surveys near NAVSTA Norfolk and adjacent areas near Virginia Beach, Virginia, from August 2012 through August 2015 (Engelhaupt *et al.*, 2016). This density includes sightings inshore of the Chesapeake Bay from NAVSTA Norfolk west to the Thimble Shoals Bridge, and is the most representative density for the project area. NMFS multiplied the density of 1.38 dolphins/km<sup>2</sup> by the Level B harassment zone area for each activity for the project, and then by the number of days associated with that activity (see Table 8), which resulted in 14,989 takes by Level B harassment of bottlenose dolphins (see Table 9). There is insufficient information on relative abundance to apportion the takes precisely to the three stocks present in the area. We use the same approach to estimating the apportionment of takes to stock used in the previous IHAs in the area including the HRBT project (86 FR 17458; April 2, 2021), and the U.S. Navy Norfolk Rule (86 FR 24340; May 6, 2021). Given that most of the NNCES stock are found in the Pamlico Sound Estuarine, over 160 kilometers to Norfolk, the project will assume that no more than 200 of the requested takes will be from this stock. Since members of the northern migratory coastal and southern migratory coastal stocks are thought to occur in or near the Bay in greater numbers, we will conservatively assume that no more than half of the remaining takes will accrue to either of these stocks. Additionally, a subset of these takes would likely be comprised of Chesapeake Bay resident dolphins, although the size of that population is unknown.

The largest Level A harassment area for mid-frequency cetaceans is less than 40m, which is associated with impact pile driving of the 42 inch steel pipe. The Navy will implement a shutdown zone of 200 m during this activity as well as when pile driving the 24 inch concrete piles and 28 inch steel sheet piles. The Level A harassment zones for all other activities extend less than 10 m for mid-frequency cetaceans (see Table 5 and Table



6), and the Navy will implement a minimum of a 10 m shutdown for all other activities not included in the list above (Table 10). Given the generally small size of the Level A harassment zones, and the Navy's shutdown plan, which includes the entire Level A harassment zone for all pile driving and drilling activities, we do not expect Level A harassment take of bottlenose dolphins. Therefore, the Navy did not request, and NMFS does not authorize Level A harassment take of bottlenose dolphins (Table 9).

**Table 8 – Bottlenose Dolphin Calculated Exposure Estimates.**

Location	Activity	Production Days	Level A Harassment Area (km <sup>2</sup> )	Level B Harassment Area (km <sup>2</sup> )	Level A takes	Level B takes <sup>1</sup>
Pier 4	Vibratory Removal Timber Fender Piles	9	0.00001	49.9	0	620
	Pre-Drilling Concrete Fender Piles	6	0.000001	4.38	0	36
	Impact Drive Concrete Fender Piles	3	0.0000813	0.04	0	0
CEP-175	Impact Drive Polymeric Fender Piles	2	0.000001	0.000014	0	0
	Pre-Drilling Polymeric Fender Piles	2	0.000004	4.38	0	12*
	Vibratory Drive Polymeric Fender Piles	2	0.000004	11.1	0	31
Pier 3	Impact Drive Concrete Bearing Piles	150	0.00010155	0.04	0	8
CEP-176	Impact Drive Steel Bearing Piles	55	0.00174582	0.41	0	31*
	Impact Drive Sheet Piles	55	0.00119976	2.43	0	184*
	Vibratory Drive Steel Bearing Piles	55	0.00008	45.97	0	3489
	Vibratory Drive Sheet Piles	56	0.000025	39.9	0	3083



CEP-102	Impact Drive Steel Bearing Piles	2	0.00245817	1.37	0	4*
	Impact Drive Sheet Piles	2	0.00154729	7.96	0	22*
	Impact Drive Concrete Bearing Piles	6	0.0000813	0.02	0	0
	Pre-Drilling Concrete Bearing Piles	6	0.000001	4.38	0	36
	Vibratory Extraction Timber Fender Piles	3	0.00001	49.9	0	207
	Vibratory Extraction Concrete Fender Piles	6	0.00001	49.9	0	413
	Vibratory Extraction Polymeric Fender Piles	1	0.00001	49.9	0	69
	Vibratory Drive Steel Bearing Piles	2	0.000156	98.91	0	273
	Vibratory Drive Sheet Piles	2	0.000045	90.6	0	250
Pier 3T	Vibratory Extraction Concrete Bearing Piles	72	0.00001	49.9	0	4958
	Vibratory Extraction Timber Fender Piles	22	0.00001	49.9	0	1515
Total Bottlenose Dolphin Take Estimate					0 <sup>2</sup>	14989 <sup>3</sup>

1. All Level and Level B harassment exposure estimates were calculated using a density estimate of 1.38 Engelhaupt *et al.* (2016).
2. The maximum distance to the Level A harassment threshold is 35.6 m resulting from impact driving 42-inch steel pipe piles. This falls within the shutdown zones (see Table 10). Therefore, no Level A harassment take was requested nor authorized for bottlenose dolphins.
3. Some piles for a few projects are listed twice, due to the contractor choosing the installation method. However only the method resulting in the most takes was counted in the take totals. In all cases, vibratory driving resulted in the most takes. Numbers with an asterisk indicate calculated takes that were excluded from the total due to duplication.

Harbor Porpoise



Harbor porpoises are known to occur in the coastal waters near Virginia Beach (Hayes *et al.*, 2019). Density data for this species in the project vicinity do not exist as harbor porpoise sighting data collected by the U.S. Navy near NAVSTA Norfolk and Virginia Beach from 2012 to 2015 (Engelhaupt *et al.*, 2014; 2015; 2016) did not produce enough sightings to calculate densities. One group of two harbor porpoises was seen during spring 2015 (Engelhaupt *et al.*, 2016). Elsewhere in their range, harbor porpoises typically occur in groups of two to three individuals (Carretta *et al.*, 2001; Smultea *et al.*, 2017). Given the lack of density estimates for harbor porpoises in the construction area, this exposure analysis (similar to the methods used in previous IHAs) assumes that there is a porpoise sighting once every 60 days of pile driving or drilling, which would equate to 6 sightings per year over 280 days of activity. Assuming an average group size of two (Hansen *et al.*, 2018; Elliser *et al.*, 2018), NMFS authorizes 12 takes by Level B harassment of harbor porpoises (Table 8).

Harbor porpoises are members of the high-frequency hearing group which have Level A harassment isopleths as large as 1193 m during the 42 inch steel pipe pile installation using impact pile driving. The Navy will implement a 500 meter shutdown zone for harbor porpoises during the aforementioned activity in addition to impact pile driving the 24 inch concrete piles and 28 inch steel sheets, as a reasonable area to observe and implement shutdowns for this small and cryptic species while avoiding an impracticable number of shutdowns. Consequently, the Navy has requested authorization of take by Level A harassment for harbor porpoises during the project. While NMFS believes that take by Level A harassment is not likely, due to the duration of time a harbor porpoise would be required to remain within the Level A harassment zone to accumulate enough energy to experience PTS, we authorize 10 takes by Level A harassment as requested by the Navy (Table 8).

Harbor Seal



The expected number of harbor seals in the project area was estimated using systematic land- and vessel-based survey data for in-water and hauled-out seals collected by the U.S. Navy at the CBBT rock armor and portal islands from 2014 through 2019 (Jones *et al.*, 2020). The average daily seal count from the field season ranged from 8 to 23 seals, with an average of 13.6 harbor seals across all the field seasons.

The Navy expects, and NMFS concurs, that harbor seals are likely to be present from November to April. Consistent with previous nearby projects, NMFS calculated take by Level B harassment by multiplying 13.6 seals by 183, which is the number of pile driving/drilling days expected to occur from November to April, which results in 2489 harbor seal takes. However, NMFS believes this may be an overestimate of take as recent monitoring reports from a nearby-completed project observed 0 harbor seals during the course of their project (HRCF, *Unpublished*). With these new data in hand, we alter our estimation method for this species and authorize half of the take estimated above to achieve a more realistic number of seals that may be encountered, while still conservatively estimating noise exposures. Therefore, NMFS authorizes 1,244 takes of harbor seals.

The largest Level A harassment isopleth for phocid species is less than 550 m, which would occur during the installation of the 42 inch steel pipe pile by impact pile driving. The Navy will implement a 200 m shutdown zone for this activity in addition to the installation of the 24 inch concrete piles and 28 inch steel sheet piles by impact pile driving (Table 9). Given the area of the Level A harassment zone that will exceed the implemented shutdown zone for these activities, and the cryptic nature of the species, the Navy requested 16 takes by Level A harassment of harbor seals. For all other activities, the required shutdown zones exceed the calculated Level A harassment isopleth for phocid species. Therefore, NMFS authorizes 1,228 takes by Level B harassment, and 16 takes by Level A harassment of harbor seals (Table 9).



## Gray Seal

Very little information is available about the occurrence of gray seals in the Chesapeake Bay and coastal waters. Survey data collected by the U.S. Navy at the CBBT portal islands from 2014 through 2018 (Rees *et al.*, 2016; Jones *et al.*, 2018) observed one gray seal in February 2015 and one seal in February of 2016, while no seals were observed at any other time. Maintaining the assumption that gray seals may utilize the Chesapeake Bay waters, the Navy conservatively estimates that one gray seal may be exposed to noise levels above the Level B harassment threshold for every 60 days of vibratory pile driving during the six month period when they are most likely to be present.

The Level A harassment isopleth for phocids is noted above for harbor seals, while the largest Level B harassment zone area is anticipated during drilling for installation of the 42 inch steel pipes (~16 km<sup>2</sup>). The Navy calculated a total of 3 exposures for gray seals during the course of the project and they are expected to be very uncommon in the Project area. It is anticipated that up to 20 percent of gray seal exposures would be at or above the Level A harassment threshold based on the proportion of the project's pile driving and drilling activities that could exceed the Level A harassment threshold. Therefore, the Navy requested, and NMFS is authorizing, 1 take by Level A harassment and 2 takes by Level B harassment of gray seals (Table 8).

**Table 8 – Authorized Amount of Taking, by Level A Harassment and Level B Harassment, by Species and Stock and Percent of Take by Stock**

Common Name	Stock	Level A Harassment	Level B Harassment	Total	Percent of Stock
Humpback whale	Gulf of Maine <sup>b</sup>	0	12	12	1
Bottlenose dolphin	WNA Coastal, Northern Migratory <sup>a,c,d</sup>	0	19327	19327	111
	WNA Coastal, Southern Migratory <sup>a,c,d</sup>	0	19327	19327	197



	Northern NC Estuarine <sup>a,c,d</sup>	0	200	200	24
Harbor porpoise	Gulf of Maine/Bay of Fundy	10	12	22	< 0.01
Harbor seal	WNA	16	1,228	1244	2
Gray seal	WNA	1	2	3	<0.01

<sup>a</sup> Take estimates are weighted based on calculated percentages of population for each distinct stock, assuming animals present would follow same probability of presence in the project area. Please see the **Small Numbers** section for additional information.

<sup>b</sup> West Indies DPS. Please see the **Description of Marine Mammals in the Area of Specified Activities** section for further discussion.

<sup>c</sup> Assumes multiple repeated takes of same individuals from small portion of each stock as well as repeated takes of Chesapeake Bay resident population (size unknown). Please see the **Small Numbers** section for additional information.

<sup>d</sup> The sum of authorized take for the three stocks of bottlenose dolphins does not add up to the total authorized number (14989) due to rounding.

## Mitigation

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses (latter not applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, we carefully consider two primary factors:

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat. This considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that



the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned), the likelihood of effective implementation (probability implemented as planned), and;

(2) The practicability of the measures for applicant implementation, which may consider such things as cost, impact on operations, and, in the case of a military readiness activity, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

The following mitigation measures are required through the IHA:

- Avoid direct physical interactions with marine mammals during construction activity. If a marine mammal comes within 10 meters of such activity, operations must cease and vessels must reduce speed to the minimum level required to maintain steerage and safe working conditions, as necessary to avoid direct physical interaction;
- The Navy will conduct trainings between construction supervisors and crews and the marine mammal monitoring team prior to the start of all activities subject to this IHA and when new personnel join the work, to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures; and
- Pile driving activity must be halted upon observation of either a species for which incidental take is not authorized or a species for which incidental take has been authorized but the authorized number of takes has been met, entering or within the harassment zone.

The following mitigation measures apply to the Navy's in-water construction activities:

*Establishment of Shutdown Zones*—The Navy will establish shutdown zones for all pile driving and removal and drilling activities. The purpose of a shutdown zone is



generally to define an area within which shutdown of the activity will occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Shutdown zones will vary based on the activity type and marine mammal hearing group (Table 9).

*Protected Species Observers (PSOs)*—The placement of PSOs during all pile driving and removal and drilling activities (described in the **Monitoring and Reporting** section) will ensure that the entire shutdown zone is visible. Should environmental conditions deteriorate such that the entire shutdown zone will not be visible (*e.g.*, fog, heavy rain), pile driving and removal and drilling must be delayed until the PSO is confident marine mammals within the shutdown zone could be detected.

*Monitoring for Level A and B Harassment*—The Navy will monitor the Level B harassment zones to the extent practicable, and all of the Level A harassment zones. The Navy will monitor at least a portion of the Level B harassment zone on all pile driving, removal or drilling days. Monitoring zones provide utility for observing by establishing monitoring protocols for areas adjacent to the shutdown zones. Monitoring zones enable observers to be aware of and communicate the presence of marine mammals in the project area outside the shutdown zone and thus prepare for a potential cessation of activity should the animal enter the shutdown zone.

*Pre-activity Monitoring*—Prior to the start of daily in-water construction activity, or whenever a break in pile driving/removal of 30 minutes or longer occurs, PSOs will observe the shutdown and monitoring zones for a period of 30 minutes. The shutdown zone will be considered cleared when a marine mammal has not been observed within the zone for that 30-minute period. If a marine mammal is observed within the shutdown zones listed in Table 10, pile driving and drilling activity must be delayed or halted. If pile driving and/or drilling is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited



and been visually confirmed beyond the shutdown zones or 15 minutes have passed without re-detection of the animal. When a marine mammal for which Level B harassment take is authorized is present in the Level B harassment zone, activities may begin and Level B harassment take will be recorded. If work ceases for more than 30 minutes, the pre-activity monitoring of the shutdown zones will commence. A determination that the shutdown zone is clear must be made during a period of good visibility (*i.e.*, the entire shutdown zone and surrounding waters must be visible to the naked eye).

*Soft Start*—Soft-start procedures are used to provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the hammer operating at full capacity. For impact pile driving, contractors will be required to provide an initial set of three strikes from the hammer at reduced energy, followed by a 30-second waiting period, then two subsequent reduced-energy strike sets. Soft start will be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer.

**Table 9—Shutdown Zones (m) During Pile Installation and Removal**

Pile type, size, and driving method	Humpback whales	Porpoises	All other species
Vibratory drive 14-inch timber piles	30	30	30
Vibratory drive 13-inch polymeric piles	30	30	30
Impact drive 13-inch polymeric piles	30	30	30
Vibratory drive 16-inch and 18-inch concrete piles	30	30	30
Impact drive 16-inch and 18-inch concrete piles	50	45	45
Vibratory drive 24-inch concrete piles	10	10	10
Impact drive 24-inch concrete piles	160	500	200



Vibratory drive 28-inch steel sheet piles	70	65	65
Impact drive 28-inch steel sheet piles	780	500	200
Vibratory drive 42-inch steel pipe piles	80	120	50
Impact drive 42-inch steel pipe piles	1,010	500	200
Pre-Drilling	20	500	200

Based on our evaluation of the applicant's measures, as well as other measures considered by NMFS, NMFS has determined that the mitigation measures provide the means effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

### **Monitoring and Reporting**

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the action area. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.*, presence, abundance, distribution, density).
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better



understanding of: (1) action or environment (*e.g.*, source characterization, propagation, ambient noise); (2) affected species (*e.g.*, life history, dive patterns); (3) co-occurrence of marine mammal species with the action; or (4) biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas).

- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors.
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks.
- Effects on marine mammal habitat (*e.g.*, marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat).
- Mitigation and monitoring effectiveness.

The Navy has submitted a Marine Mammal Monitoring Plan to NMFS that has been approved for this project.

### *Visual Monitoring*

Marine mammal monitoring during pile driving and removal and drilling activities must be conducted by PSOs meeting NMFS' standards and in a manner consistent with the following:

- Independent PSOs (*i.e.*, not construction personnel) who have no other assigned tasks during monitoring periods must be used;
- At least one PSO must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization;
- Other PSOs may substitute education (degree in biological science or related field) or training for experience; and



- Where a team of three or more PSOs is required, a lead observer or monitoring coordinator must be designated. The lead observer must have prior experience working as a marine mammal observer during construction.

PSOs must have the following additional qualifications:

- Ability to conduct field observations and collect data according to assigned protocols;
- Experience or training in the field identification of marine mammals, including the identification of behaviors;
- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;
- Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior; and
- Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

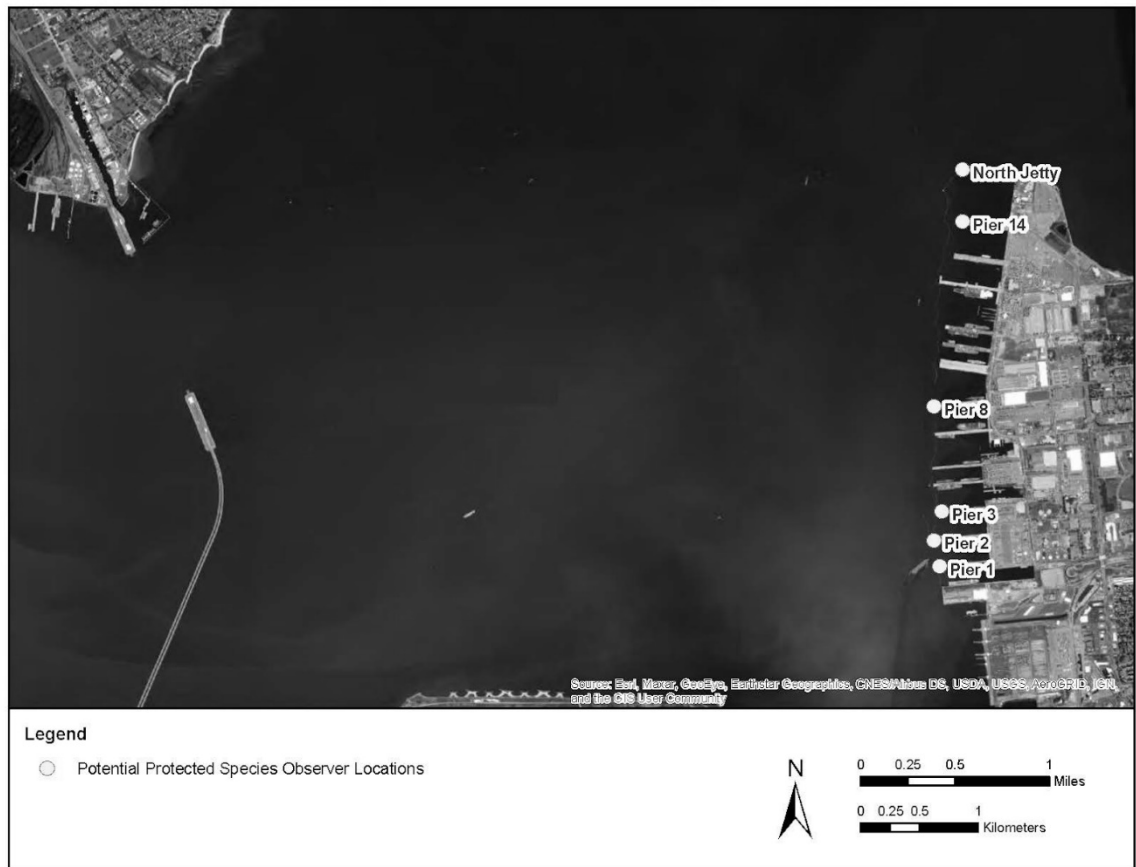
The Navy must establish the following monitoring locations. For all pile driving activities, a minimum of one PSO must be assigned to the active pile driving or drilling location to monitor the shutdown zones and as much of the Level A and Level B harassment zones as possible. If the active project location includes demolition activities, then the next adjacent pier may be used as an appropriate monitoring location ensuring that the aforementioned criteria is met. Monitoring must be conducted by a minimum of two PSOs for impact driving, and a minimum of three PSOs for vibratory and drilling activities. For activities in Table 6 with Level B harassment zones larger than 3000 m, at



least one PSO must be stationed on either Pier 14 or the North Jetty to monitor the part of the zone exceeding the edge of the Norfolk Naval Station (see Figure 3). The third PSO for vibratory and drilling activities will be located on Pier 1. PSOs will be placed at the best vantage point(s) practicable to monitor for marine mammals and implement shutdown/delay procedures (See Figure 3 for representative monitoring locations). If changes are necessary to ensure full coverage of the Level A harassment zones, the Navy shall contact NMFS to alter observer locations (*e.g.*, vessel blocking view from pier location).

Monitoring will be conducted 30 minutes before, during, and 30 minutes after all in water construction activities. In addition, observers shall record all incidents of marine mammal occurrence, regardless of distance from activity, and shall document any behavioral reactions in concert with distance from drilling or piles being driven or removed. Pile driving activities include the time to install or remove a single pile or series of piles, as long as the time elapsed between uses of the pile driving equipment is no more than 30 minutes.





**Figure 3. Protected Species Observer Locations at Naval Station Norfolk in Norfolk, Virginia.**



## Acoustic Monitoring

The Navy intends to conduct a sound source verification (SSV) study for various types of pile driving, extraction, and drilling associated with this project. Monitoring shall include two underwater positions and shall be conducted in accordance with NMFS guidance (NMFS 2012). One underwater location shall be at the standard 10 meters from the sound source, while the other positions shall be located at a distance of at least 20 times water depth at the pile. If the contractor determines that this distance interferes with shipping lanes for vessel traffic, or if there is no other reasons why this criteria cannot be achieved (*e.g.*, creates an unsafe scenario for crew), the Navy's Acoustic Monitoring Plan must offer an alternate site as close to the criteria as possible for NMFS' approval. Measurements shall be collected as detailed in the Navy's application (Table 13-1) for each pile type during the entire pile-driving/extraction/drilling event. Monitoring shall be conducted for 10 percent of each type of activity that has not previously been monitored at NAVSTA Norfolk (See Table 10 for complete list).

**Table 10—Acoustic Monitoring Summary.**

Pile Type <sup>1</sup>	Count <sup>2</sup>	Method of Install/Removal <sup>2</sup>	Number Monitored <sup>2</sup>
13-inch polymeric	14	Vibratory	5
13-inch polymeric	14	Impact	5
13-inch polymeric	14	Drilling	5
16- or 18- inch concrete	308	Vibratory	10
24-inch concrete	47	Impact	10
42-inch steel pipe	113	Vibratory	10
42-inch steel pipe	113	Impact	10
28-inch steel sheet	229	Vibratory	10
28-inch steel sheet	229	Impact	10

1. Data has previously been collected on the impact driving of 24-inch concrete piles and timber piles at NAVSTA Norfolk; therefore, no additional data collection is required for these pile types.

2. Some piles may be either vibratory or impact pile driving, or a combination of both. The acoustic monitoring report at the end of Year 1 construction shall clarify which installation method was utilized and monitored for each pile type.

Environmental data shall be collected, including but not limited to, the following:  
wind speed and direction, air temperature, humidity, surface water temperature, water



depth, wave height, weather conditions, and other factors that could contribute to influencing underwater sound levels (*e.g.*, aircraft, boats, etc.).

### *Reporting*

A draft marine mammal monitoring report and a draft acoustic monitoring report will be submitted to NMFS within 90 days after the completion of pile driving and removal and drilling activities, or 60 days prior to a requested date of issuance of any future IHAs or LOAs for the project, or other projects at the same location, whichever comes first. If the Navy goes ahead with their plan to request incidental take authorization for future phases of this project, the future LOA will be requested for coverage beginning on April 1, 2023; the draft reports under this issued IHA must be submitted to NMFS by January 31, 2023. The marine mammal report will include an overall description of work completed, a narrative regarding marine mammal sightings, and associated PSO data sheets. Specifically, the report must include:

- Dates and times (begin and end) of all marine mammal monitoring.
- Construction activities occurring during each daily observation period, including:
  - a) how many and what type of piles were driven or removed and the method (*i.e.*, impact or vibratory); and
  - b) the total duration of time for each pile (vibratory driving) or hole (drilling) and number of strikes for each pile (impact driving);
- PSO locations during marine mammal monitoring; and
- Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance.

Upon observation of a marine mammal the following information must be reported:



- Name of PSO who sighted the animal(s) and PSO location and activity at time of sighting;
- Time of sighting;
- Identification of the animal(s) (*e.g.*, genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species;
- Distance and location of each observed marine mammal relative to the pile being driven or hole being drilled for each sighting;
- Estimated number of animals (min/max/best estimate);
- Estimated number of animals by cohort (adults, juveniles, neonates, group composition, etc.);
- Description of any marine mammal behavioral observations (*e.g.*, observed behaviors such as feeding or traveling), including an assessment of behavioral responses thought to have resulted from the activity (*e.g.*, no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching);
- Number of marine mammals detected within the harassment zones, by species; and
- Detailed information about implementation of any mitigation (*e.g.*, shutdowns and delays), a description of specified actions that ensured, and resulting changes in behavior of the animal(s), if any.

The acoustic monitoring report must contain the informational elements described in the Acoustic Monitoring Plan and, at minimum, must include:

- Hydrophone equipment and methods: recording device, sampling rate, distance (m) from the pile where recordings were made; depth of water and recording device(s);



- Type and size of pile being driven, substrate type, method of driving during recordings (*e.g.*, hammer model and energy), and total pile driving duration;
- Whether a sound attenuation device is used and, if so, a detailed description of the device used and the duration of its use per pile;
- For impact pile driving and/or drilling (per pile): Number of strikes and strike rate; depth of substrate to penetrate; pulse duration and mean, median, and maximum sound levels (dB re: 1  $\mu$ Pa): root mean square sound pressure level ( $SPL_{rms}$ ); cumulative sound exposure level ( $SEL_{cum}$ ), peak sound pressure level ( $SPL_{peak}$ ), and single-strike sound exposure level ( $SEL_{s-s}$ ); and
- For vibratory driving/removal and/or drilling (per pile): Duration of driving per pile; mean, median, and maximum sound levels (dB re: 1  $\mu$ Pa): root mean square sound pressure level ( $SPL_{rms}$ ), cumulative sound exposure level ( $SEL_{cum}$ ) (and timeframe over which the sound is averaged).

If no comments are received from NMFS within 30 days, the draft reports will constitute the final reports. If comments are received, a final report addressing NMFS' comments must be submitted within 30 days after receipt of comments. All PSO datasheets and/or raw sighting data must be submitted with the draft marine mammal report.

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the Navy must immediately cease the specified activities and shall report the incident to the Office of Protected Resources (OPR) (*PR.ITP.MonitoringReports@noaa.gov*) NMFS and to the Greater Atlantic Region New England/Mid-Atlantic Regional Stranding Coordinator as soon as feasible. If the death or injury was clearly caused by the specified activity, the Navy must immediately cease the specified activities until NMFS is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the



terms of the authorization. The Navy must not resume their activities until notified by NMFS.

The report must include the following information:

- i. Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
- ii. Species identification (if known) or description of the animal(s) involved;
- iii. Condition of the animal(s) (including carcass condition if the animal is dead);
- iv. Observed behaviors of the animal(s), if alive;
- v. If available, photographs or video footage of the animal(s); and
- vi. General circumstances under which the animal was discovered.

### **Negligible Impact Analysis and Determination**

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be “taken” through harassment, NMFS considers other factors, such as the likely nature of any responses (*e.g.*, intensity, duration), the context of any responses (*e.g.*, critical reproductive time or location, migration), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS’s implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the environmental baseline (*e.g.*,



as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

Pile driving and removal and drilling activities have the potential to disturb or displace marine mammals. Specifically, the project activities may result in take, in the form of Level A and Level B harassment from underwater sounds generated from pile driving and removal and drilling. Potential takes could occur if individuals are present in the ensonified zone when these activities are underway.

The takes from Level A and Level B harassment would be due to potential behavioral disturbance, TTS, and PTS. No serious injury or mortality is anticipated given the nature of the activity and measures designed to minimize the possibility of injury to marine mammals. The potential for harassment is minimized through the construction method and the implementation of the planned mitigation measures (see **Mitigation** section).

The Level A harassment zones identified in Tables 6 and 7 are based upon an animal exposed to pile driving or drilling multiple piles per day. Considering the short duration to impact drive each pile and breaks between pile installations (to reset equipment and move pile into place), means an animal would have to remain within the area estimated to be ensonified above the Level A harassment threshold for multiple hours. This is highly unlikely given marine mammal movement throughout the area, especially for small, fast moving species such as small cetaceans and pinnipeds. Additionally, no Level A harassment is anticipated for humpback whales due to the required mitigation measures, which we expect the Navy will be able to effectively implement given the small Level A harassment zone sizes and high visibility of humpback whales. If an animal was exposed to accumulated sound energy, the resulting PTS would likely be small (*e.g.*, PTS onset) at lower frequencies where pile driving



energy is concentrated, and unlikely to result in impacts to individual fitness, reproduction, or survival.

The Navy's pile driving project precludes the likelihood of serious injury or mortality. For all species and stocks, take will occur within a limited, confined area (immediately surrounding NAVSTA Norfolk in the Chesapeake Bay area) of the stock's range. Level A and Level B harassment will be reduced to the level of least practicable adverse impact through use of mitigation measures described herein. Furthermore, the amount of take authorized is extremely small when compared to stock abundance.

Effects on individuals that are taken by Level B harassment, on the basis of reports in the literature as well as monitoring from other similar activities, will likely be limited to reactions such as increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (*e.g.*, Thorson and Reyff 2006). Individual animals, even if taken multiple times, will most likely move away from the sound source and be temporarily displaced from the areas of pile driving or drilling, although even this reaction has been observed primarily only in association with impact pile driving. The pile driving and drilling activities analyzed here are similar to, or less impactful than, numerous other construction activities conducted along both Atlantic and Pacific coasts, which have taken place with no known long-term adverse consequences from behavioral harassment. Furthermore, many projects similar to this one are also believed to result in multiple takes of individual animals without any documented long-term adverse effects. Level B harassment will be minimized through use of mitigation measures described herein and, if sound produced by project activities is sufficiently disturbing, animals are likely to simply avoid the area while the activity is occurring, particularly as the project is located on a busy waterfront with high amounts of vessel traffic.



As previously described in the notice of proposed IHA (87 FR3976; January 26, 2022), UMEs have been declared for Northeast pinnipeds (including harbor seal and gray seal) and Atlantic humpback whales. However, we do not expect authorized takes to exacerbate or compound upon these ongoing UMEs. As noted previously, no injury, serious injury, or mortality is expected or authorized, and Level B harassment takes of humpback whale, harbor seal and gray seal will be reduced to the level of least practicable adverse impact through the incorporation of the mitigation measures. For the WNA stock of gray seal, the estimated stock abundance is 451,600 animals. Given that only 1 to 3 takes by Level B harassment are authorized for this stock annually, we do not expect this authorization to exacerbate or compound upon the ongoing UME.

For the WNA stock of harbor seals, the estimated abundance is 61,336 individuals. The estimated M/SI for this stock (339) is well below the PBR (1,729). As such, the Level B harassment takes of harbor seal are not expected to exacerbate or compound upon the ongoing UMEs.

With regard to humpback whales, the UME does not yet provide cause for concern regarding population-level impacts. Despite the UME, the relevant population of humpback whales (the Gulf of Maine stock and the West Indies breeding population, or distinct population segment (DPS)) remains healthy. The Gulf of Marine stock of humpback whales was listed as strategic under the MMPA from 1995 through the 2018 SARs but has since been removed from this list. Annual SARs have also indicated an increasing population trend for the stock, with a current abundance estimate of 1369 whales (Hayes *et al.*, 2021).

Prior to 2016, humpback whales were listed under the ESA as an endangered species worldwide. Following a 2015 global status review (Bettridge *et al.*, 2015), NMFS established 14 DPSs with different listing statuses (81 FR 62259; September 8, 2016) pursuant to the ESA. The West Indies DPS, which consists of the whales whose breeding



range includes the Atlantic margin of the Antilles from Cuba to northern Venezuela, and whose feeding range primarily includes the Gulf of Maine, eastern Canada, and western Greenland, was delisted. The status review identified harmful algal blooms, vessel collisions, and fishing gear entanglements as relevant threats for this DPS, but noted that all other threats are considered likely to have no or minor impact on population size or the growth rate of this DPS (Bettridge *et al.*, 2015). As described in Bettridge *et al.*, (2015), the West Indies DPS has a substantial population size (*i.e.*, 12,312 (95 percent CI 8,688-15,954) whales in 2004-05 (Bettridge *et al.*, 2003)), and appears to be experiencing consistent growth. This trend is consistent with that in 2021 draft SARs as mentioned above. Further, NMFS is authorizing no more than eight takes by Level B harassment annually of humpback whale.

The project is also not expected to have significant adverse effects on affected marine mammals' habitats. The project activities will not modify existing marine mammal habitat for a significant amount of time. The activities may cause some fish to leave the area of disturbance, thus temporarily impacting marine mammals' foraging opportunities in a limited portion of the foraging range; but, because of the short duration of the activities and the relatively small area of the habitat that may be affected (with no known particular importance to marine mammals), the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences.

In summary and as described above, the following factors primarily support our determination that the impacts resulting from this activity are not expected to adversely affect the species or stock through effects on annual rates of recruitment or survival:

- No mortality is anticipated or authorized;
- Authorized Level A harassment will be very small amounts and of low degree;



- The intensity of anticipated takes by Level B harassment is relatively low for all stocks;
- The number of anticipated takes is very low for humpback whale, harbor porpoise, and gray seal;
- The specified activity and associated ensonified areas are very small relative to the overall habitat ranges of all species and do not include habitat areas of special significance (Biologically Important Areas or ESA-designated critical habitat);
- The lack of anticipated significant or long-term negative effects to marine mammal habitat;
- The presumed efficacy of the mitigation measures in reducing the effects of the specified activity; and
- Monitoring reports from similar work in the Chesapeake Bay have documented little to no effect on individuals of the same species impacted by the specified activities.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the monitoring and mitigation measures, NMFS finds that the total marine mammal take from the activity will have a negligible impact on all affected marine mammal species or stocks.

### **Small Numbers**

As noted above, only small numbers of incidental take may be authorized under sections 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our



determination of whether an authorization is limited to small numbers of marine mammals. When the predicted number of individuals to be taken is fewer than one third of the species or stock abundance, the take is considered to be of small numbers. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

The amount of take NMFS is authorizing is below one third of the estimated stock abundance for humpback whale, harbor porpoise, gray seal, the Northern North Carolina Estuarine Stock of bottlenose dolphin and harbor seal (in fact, take of individuals is less than 5 percent of the abundance of the affected stocks, see Table 8). This is likely a conservative estimate because they assume all takes are of different individual animals which is likely not the case. Some individuals may return multiple times in a day, but PSOs will count them as separate takes if they cannot be individually identified.

There are three bottlenose dolphin stocks that could occur in the project area. Therefore, the estimated 14,989 dolphin takes by Level B harassment would likely be split among the western North Atlantic northern migratory coastal stock, the western North Atlantic southern migratory coastal stock, and the northern North Carolina Estuarine stock (NNCES). Based on the stocks' respective occurrence in the area, NMFS estimates that there would be no more than 200 takes from the NNCES stock, representing 24 percent of that population, with the remaining takes split evenly between the northern and southern migratory coastal stocks. Based on the consideration of various factors as described below, we have determined the number of individuals taken will comprise less than one-third of the best available population abundance estimate of either coastal migratory stocks. Detailed descriptions of the stocks' ranges have been provided in the **Description of Marine Mammals in the Area of Specified Activities** section.

Both the northern migratory coastal and southern migratory coastal stocks have expansive ranges and they are the only dolphin stocks thought to make broad-scale,



seasonal migrations in coastal waters of the western North Atlantic. Given the large ranges associated with these two stocks it is unlikely that large segments of either stock would approach the project area and enter into the Chesapeake Bay. The majority of both stocks are likely to be found widely dispersed across their respective habitat ranges and unlikely to be concentrated in or near the Chesapeake Bay.

Furthermore, the Chesapeake Bay and nearby offshore waters represent the boundaries of the ranges of each of the two coastal stocks during migration. The northern migratory coastal stock is found during warm water months from coastal Virginia, including the Chesapeake Bay and Long Island, New York. The stock migrates south in late summer and fall. During cold water months, dolphins may be found in coastal waters from Cape Lookout, North Carolina, to the North Carolina/Virginia border. During January-March, the southern Migratory coastal stock appears to move as far south as northern Florida. From April-June, the stock moves back north to North Carolina. During the warm water months of July-August, the stock is presumed to occupy the coastal waters north of Cape Lookout, North Carolina, to Assateague, Virginia, including the Chesapeake Bay. There is likely some overlap between the northern and southern migratory stocks during spring and fall migrations, but the extent of overlap is unknown.

The Chesapeake Bay and waters offshore of the mouth are located on the periphery of the migratory ranges of both coastal stocks (although during different seasons). Additionally, each of the migratory coastal stocks are likely to be located in the vicinity of the Bay for relatively short timeframes. Given the limited number of animals from each migratory coastal stock likely to be found at the seasonal migratory boundaries of their respective ranges, in combination with the short time periods (~ 2 months) animals might remain at these boundaries, it is reasonable to assume that takes are likely to occur only within some small portion of either of the migratory coastal stocks.



Many of the dolphin observations in the Bay are likely repeated sightings of the same individuals. The Potomac-Chesapeake Dolphin Project has observed over 1,200 unique animals since observations began in 2015. Re-sightings of the same individual can be highly variable. Some dolphins are observed once per year, while others are highly regular with greater than 10 sightings per year (Mann, Personal Communication). Similarly, using available photo-identification data, Engelhaupt *et al.*, (2016) determined that specified individuals were often observed in close proximity to their original sighting locations and were observed multiple times in the same season or same year. Ninety-one percent of re-sighted individuals (100 of 110) in the study area were recorded less than 30 km from the initial sighting location. Multiple sightings of the same individual would considerably reduce the number of individual animals that are taken by harassment. Furthermore, the existence of a resident dolphin population in the Bay would increase the percentage of dolphin takes that are actually re-sightings of the same individuals.

In summary and as described above, the following factors primarily support our determination regarding the incidental take of small numbers of the affected stocks of a species or stock:

- The take of marine mammal stocks authorized for take comprises less than 5 percent of any stock abundance (with the exception of the Northern and Southern Migratory stocks of bottlenose dolphin);
- Potential bottlenose dolphin takes in the project area are likely to be allocated among three distinct stocks;
- Bottlenose dolphin stocks in the project area have extensive ranges and it would be unlikely to find a high percentage of the individuals of any one stock concentrated in a relatively small area such as the project area or the Chesapeake Bay;



- The Chesapeake Bay represents the migratory boundary for each of the specified dolphin stocks and it would be unlikely to find a high percentage of any stock concentrated at such boundaries; and
- Many of the takes would likely be repeats of the same animals and likely from a resident population of the Chesapeake Bay.

Based on the analysis contained herein of the activity (including the mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds that small numbers of marine mammals will be taken relative to the population size of the affected species or stocks.

### **Unmitigable Adverse Impact Analysis and Determination**

There are no relevant subsistence uses of the affected marine mammal stocks or species implicated by this action. Therefore, NMFS has determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

### **Endangered Species Act**

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA: 16 U.S.C. 1531 *et seq.*) requires that each Federal agency insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of IHAs, NMFS consults internally whenever we propose to authorize take for endangered or threatened species.

No incidental take of ESA-listed species is authorized or expected to result from this activity. Therefore, NMFS has determined that formal consultation under section 7 of the ESA is not required for this action.

### **National Environmental Policy Act**



To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) and NOAA Administrative Order (NAO) 216-6A, NMFS must review our proposed action (*i.e.*, the issuance of an IHA) with respect to potential impacts on the human environment.

This action is consistent with categories of activities identified in Categorical Exclusion B4 (IHAs with no anticipated serious injury or mortality) of the Companion Manual for NOAA Administrative Order 216-6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has determined that the issuance of this IHA qualifies to be categorically excluded from further NEPA review.

#### **Authorization**

As a result of these determinations, NMFS has issued an IHA to the U.S. Navy for conducting pile driving and drilling activities associated with the demolition and reconstruction of Pier 3 at Naval Station Norfolk, in Norfolk, Virginia from April 1, 2022 through March 31, 2023, that includes the previously explained mitigation, monitoring, and reporting requirements. The final IHA can be found at <https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act>.

Dated: March 15, 2022.

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Kimberly Damon-Randall,  
Director, Office of Protected Resources,  
National Marine Fisheries Service.



